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RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/067,989

DATE: 06/05/2002

TIME: 16:53:21

Input Set : A:\028750-219.ST25.txt

Output Set: N:\CRF3\06052002\J067989.raw

ENTERED

3 <110> APPLICANT: Dinkins, Randy  
 4 Reddy, M.S. Srinivasa  
 5 Collins, Glenn B.  
 7 <120> TITLE OF INVENTION: Transgenic plants expressing MinD or MinE and an efficient  
 8 method for plant chloroplast transformation and gene expression  
 10 <130> FILE REFERENCE: 028750-219  
 12 <140> CURRENT APPLICATION NUMBER: US 10/067,989  
 C--> 13 <141> CURRENT FILING DATE: 2002-05-24  
 15 <150> PRIOR APPLICATION NUMBER: US 60/267,488  
 16 <151> PRIOR FILING DATE: 2001-02-09  
 18 <160> NUMBER OF SEQ ID NOS: 18  
 20 <170> SOFTWARE: FastSEQ for Windows Version 4.0  
 22 <210> SEQ ID NO: 1  
 23 <211> LENGTH: 326  
 24 <212> TYPE: PRT  
 25 <213> ORGANISM: Arabidopsis thaliana  
 27 <400> SEQUENCE: 1  
 28 Met Ala Ser Leu Arg Leu Phe Ser Thr Asn His Gln Ser Leu Leu Leu  
 29 1 5 10 15  
 30 Pro Ser Ser Leu Ser Gln Lys Thr Leu Ile Ser Ser Pro Arg Phe Val  
 31 20 25 30  
 32 Asn Asn Pro Ser Arg Arg Ser Pro Ile Arg Ser Val Leu Gln Phe Asn  
 33 35 40 45  
 34 Arg Lys Pro Glu Leu Ala Gly Glu Thr Pro Arg Ile Val Val Ile Thr  
 35 50 55 60  
 36 Ser Gly Lys Gly Gly Val Gly Lys Thr Thr Thr Thr Ala Asn Val Gly  
 37 65 70 75 80  
 38 Leu Ser Leu Ala Arg Tyr Gly Phe Ser Val Val Ala Ile Asp Ala Asp  
 39 85 90 95  
 40 Leu Gly Leu Arg Asn Leu Asp Leu Leu Gly Leu Glu Asn Arg Val  
 41 100 105 110  
 42 Asn Tyr Thr Cys Val Glu Val Ile Asn Gly Asp Cys Arg Leu Asp Gln  
 43 115 120 125  
 44 Ala Leu Val Arg Asp Lys Arg Trp Ser Asn Phe Glu Leu Leu Cys Ile  
 45 130 135 140  
 46 Ser Lys Pro Arg Ser Lys Leu Pro Met Gly Phe Gly Gly Lys Ala Leu  
 47 145 150 155 160  
 48 Glu Trp Leu Val Asp Ala Leu Lys Thr Arg Pro Glu Gly Ser Pro Asp  
 49 165 170 175  
 50 Phe Ile Ile Ile Asp Cys Pro Ala Gly Ile Asp Ala Gly Phe Ile Thr  
 51 180 185 190  
 52 Ala Ile Thr Pro Ala Asn Glu Ala Val Leu Val Thr Thr Pro Asp Ile  
 53 195 200 205

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54 Thr Ala Leu Arg Asp Ala Asp Arg Val Thr Gly Leu Leu Glu Cys Asp
55      210                      215                      220
56 Gly Ile Arg Asp Ile Lys Met Ile Val Asn Arg Val Arg Thr Asp Met
57 225                      230                      235                      240
58 Ile Lys Gly Glu Asp Met Met Ser Val Leu Asp Val Gln Glu Met Leu
59                      245                      250                      255
60 Gly Leu Ser Leu Leu Gly Val Ile Pro Glu Asp Ser Glu Val Ile Arg
61                      260                      265                      270
62 Ser Thr Asn Arg Gly Phe Pro Leu Val Leu Asn Lys Pro Pro Thr Leu
63      275                      280                      285
64 Ala Gly Leu Ala Phe Glu Gln Ala Ala Trp Arg Leu Val Glu Gln Asp
65      290                      295                      300
66 Ser Met Lys Ala Val Met Val Glu Glu Glu Pro Lys Lys Arg Gly Phe
67 305                      310                      315                      320
68 Phe Ser Phe Phe Gly Gly
69                      325
72 <210> SEQ ID NO: 2
73 <211> LENGTH: 284
74 <212> TYPE: PRT
75 <213> ORGANISM: Chlorella vulgaris
77 <400> SEQUENCE: 2
78 Met Val Phe Ser Thr Gly Asn Gly Asn Gly Asp Asp Asn Ser Lys Gly
79 1      5      10      15
80 Leu Glu Arg Val Ile Val Ile Thr Ser Gly Lys Gly Gly Val Gly Lys
81      20      25      30
82 Thr Thr Thr Thr Ala Asn Leu Gly Met Ser Ile Ala Arg Leu Gly Tyr
83      35      40      45
84 Arg Val Ala Leu Ile Asp Ala Asp Ile Gly Leu Arg Asn Leu Asp Leu
85      50      55      60
86 Leu Leu Gly Leu Glu Asn Arg Val Leu Tyr Thr Ala Met Asp Ile Val
87 65      70      75      80
88 Glu Gly Gln Cys Arg Leu Asp Gln Ala Leu Ile Arg Asp Lys Arg Trp
89      85      90      95
90 Lys Asn Leu Ala Leu Leu Ala Ile Ser Lys Asn Arg Gln Lys Tyr Asn
91      100     105     110
92 Val Thr Arg Lys Asn Met Gln Asn Leu Ile Asp Ser Val Lys Glu Leu
93      115     120     125
94 Gly Phe Gln Phe Val Leu Ile Asp Cys Pro Ala Gly Ile Asp Val Gly
95      130     135     140
96 Phe Ile Asn Ala Ile Ala Ser Ala Gln Glu Ala Val Ile Val Thr Thr
97 145     150     155     160
98 Pro Glu Ile Thr Ala Ile Arg Asp Ala Asp Arg Val Ala Gly Leu Leu
99      165     170     175
100 Glu Ala Asn Gly Ile Tyr Asn Val Lys Leu Leu Val Asn Arg Val Arg
101      180     185     190
102 Pro Asp Met Ile Gln Lys Asn Asp Met Met Ser Val Arg Asp Val Gln
103      195     200     205
104 Glu Met Leu Gly Ile Pro Leu Leu Gly Ala Ile Pro Glu Asp Thr Ser
105      210     215     220

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```

106 Val Ile Ile Ser Thr Asn Lys Gly Glu Pro Leu Val Leu Asn Lys Lys
107 225                230                235                240
108 Leu Thr Leu Ser Gly Ile Ala Phe Glu Asn Ala Ala Arg Arg Leu Ile
109                245                250                255
110 Gly Lys Gln Asp Tyr Phe Ile Asp Leu Thr Ser Pro Gln Lys Gly Met
111                260                265                270
112 Phe Gln Lys Leu Gln Glu Phe Phe Leu Gly Glu Glu
113                275                280
116 <210> SEQ ID NO: 3
117 <211> LENGTH: 266
118 <212> TYPE: PRT
119 <213> ORGANISM: Synnechocystis
121 <400> SEQUENCE: 3
122 Met Asn Arg Ile Ile Val Val Thr Ser Gly Lys Gly Gly Val Gly Lys
123 1                5                10                15
124 Thr Thr Thr Thr Ala Asn Leu Gly Ala Ala Leu Ala Arg Leu Gly Lys
125                20                25                30
126 Lys Val Val Leu Ile Asp Ala Asp Phe Gly Leu Arg Asn Leu Asp Leu
127                35                40                45
128 Leu Leu Gly Leu Glu Gln Arg Ile Val Tyr Thr Ala Ile Asp Val Leu
129                50                55                60
130 Ala Asp Glu Cys Thr Ile Asp Lys Ala Leu Val Lys Asp Lys Arg Leu
131 65                70                75                80
132 Pro Asn Leu Val Leu Leu Pro Ala Ala Gln Asn Arg Ser Lys Asp Ala
133                85                90                95
134 Ile Asn Ala Glu Gln Met Gln Ser Leu Val Glu Gln Leu Lys Asp Lys
135                100               105               110
136 Phe Asp Tyr Ile Ile Ile Asp Cys Pro Ala Gly Ile Glu Ala Gly Phe
137                115               120               125
138 Arg Asn Ala Val Ala Pro Ala Gln Glu Ala Ile Ile Val Thr Thr Pro
139                130               135               140
140 Glu Met Ser Ala Val Arg Asp Ala Asp Arg Val Ile Gly Leu Leu Glu
141 145               150               155               160
142 Ala Glu Asp Ile Gly Lys Ile Ser Leu Ile Val Asn Arg Leu Arg Pro
143                165               170               175
144 Glu Met Val Gln Leu Asn Gln Met Ile Ser Val Glu Asp Ile Leu Asp
145                180               185               190
146 Leu Leu Ala Val Pro Leu Ile Gly Ile Leu Pro Asp Asp Gln Lys Ile
147                195               200               205
148 Ile Ile Ser Thr Asn Lys Gly Glu Pro Leu Val Met Glu Glu Lys Leu
149                210               215               220
150 Ser Val Pro Gly Leu Ala Phe Gln Asn Ile Ala Arg Arg Leu Glu Gly
151 225               230               235               240
152 Gln Asp Ile Pro Phe Leu Asp Phe Met Ala Ala His Asn Thr Leu Leu
153                245               250               255
154 Asn Arg Ile Arg Arg Arg Leu Leu Gly Gly
155                260               265
158 <210> SEQ ID NO: 4
159 <211> LENGTH: 270

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160 <212> TYPE: PRT
161 <213> ORGANISM: Escherichia coli
163 <400> SEQUENCE: 4
164 Met Ala Arg Ile Ile Val Val Thr Ser Gly Lys Gly Gly Val Gly Lys
165 1 5 10 15
166 Thr Thr Ser Ser Ala Ala Ile Ala Thr Gly Leu Ala Gln Lys Gly Lys
167 20 25 30
168 Lys Thr Val Val Ile Asp Phe Asp Ile Gly Leu Arg Asn Leu Asp Leu
169 35 40 45
170 Ile Met Gly Cys Glu Arg Arg Val Val Tyr Asp Phe Val Asn Val Ile
171 50 55 60
172 Gln Gly Asp Ala Thr Leu Asn Gln Ala Leu Ile Lys Asp Lys Arg Thr
173 65 70 75 80
174 Glu Asn Leu Tyr Ile Leu Pro Ala Ser Gln Thr Arg Asp Lys Asp Ala
175 85 90 95
176 Leu Thr Arg Glu Gly Val Ala Lys Val Leu Asp Asp Leu Lys Ala Met
177 100 105 110
178 Asp Phe Glu Phe Ile Val Cys Asp Ser Pro Ala Gly Ile Glu Thr Gly
179 115 120 125
180 Ala Leu Met Ala Leu Tyr Phe Ala Asp Glu Ala Ile Ile Thr Thr Asn
181 130 135 140
182 Pro Glu Val Ser Ser Val Arg Asp Ser Asp Arg Ile Leu Gly Ile Leu
183 145 150 155 160
184 Ala Ser Lys Ser Arg Arg Ala Glu Asn Gly Glu Glu Pro Ile Lys Glu
185 165 170 175
186 His Leu Leu Leu Thr Arg Tyr Asn Pro Gly Arg Val Ser Arg Gly Asp
187 180 185 190
188 Met Leu Ser Met Glu Asp Val Leu Glu Ile Leu Arg Ile Lys Leu Val
189 195 200 205
190 Gly Val Ile Pro Glu Asp Gln Ser Val Leu Arg Ala Ser Asn Gln Gly
191 210 215 220
192 Glu Pro Val Ile Leu Asp Ile Asn Ala Asp Ala Gly Lys Ala Tyr Ala
193 225 230 235 240
194 Asp Thr Val Glu Arg Leu Leu Gly Glu Glu Arg Pro Phe Arg Phe Ile
195 245 250 255
196 Glu Glu Glu Lys Lys Gly Phe Leu Lys Arg Leu Phe Gly Gly
197 260 265 270
200 <210> SEQ ID NO: 5
201 <211> LENGTH: 97
202 <212> TYPE: PRT
203 <213> ORGANISM: Synechocystis sp.
205 <400> SEQUENCE: 5
206 Met Ile Leu Glu Leu Ile Glu Arg Leu Phe Ser Arg Ser Gly Lys Asn
207 1 5 10 15
208 Ser Gly Glu Asp Ala Arg Arg Arg Leu Lys Leu Val Ile Ala Asn Asp
209 20 25 30
210 Arg Ser Gly Leu Ser Pro Glu Met Met Glu Glu Met Arg Arg Glu Ile
211 35 40 45
212 Val Glu Val Val Ser Arg Tyr Val Glu Ile Asp Pro Gly Glu Met Glu

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```

213      50      55      60
214 Phe Ser Leu Glu Ser Asp Gln Arg Met Thr Ala Leu Ile Ala Asn Leu
215 65      70      75      80
216 Pro Val Arg Arg Val Arg Arg Thr Lys Ala Lys Ser Glu Ala Gln Glu
217      85      90      95
218 Ser
222 <210> SEQ ID NO: 6
223 <211> LENGTH: 88
224 <212> TYPE: PRT
225 <213> ORGANISM: Guillardia theta
227 <400> SEQUENCE: 6
228 Met Ile Thr Glu Phe Phe Glu Arg Leu Phe Leu Ser Asn Lys Gly Ser
229 1      5      10      15
230 Arg Glu Asp Val Lys Arg Arg Leu Lys Leu Val Leu Ala His Asp Arg
231      20      25      30
232 Ser Thr Leu Asn Ala Ser Thr Leu Glu Lys Met Arg Glu Glu Ile Leu
233      35      40      45
234 Leu Val Val Ser Lys Tyr Val Glu Leu Asp Thr Asp Ser Leu Glu Phe
235      50      55      60
236 Ser Ile Arg Thr Asp Ser Lys Met Thr Ala Leu Ile Ala Asn Leu Pro
237 65      70      75      80
238 Ile Arg Arg Ile Leu Lys Asp Ile
239      85
242 <210> SEQ ID NO: 7
243 <211> LENGTH: 198
244 <212> TYPE: PRT
245 <213> ORGANISM: Chlorella protothecoides
247 <400> SEQUENCE: 7
248 Met Ala Thr Leu Leu Gln Gln Gly Thr Phe Ala Pro His Arg Ser Trp
249 1      5      10      15
250 Ser Gly Arg Lys Gly Thr Arg Arg Val Ser Lys Pro Thr Leu Asn Arg
251      20      25      30
252 Leu His Val Arg Ser Ser Ser Lys Ala Gly Ala Gly Pro Val Ser Asp
253      35      40      45
254 Ala His Leu Ala His Leu Arg Asn Ala Gly His Pro Val Pro Glu Ala
255      50      55      60
256 Pro Gly Leu Gln Gly Phe Val Ala Lys Leu Lys Ala Ala Trp Gln Ile
257 65      70      75      80
258 Phe Phe Pro Glu Lys Pro Pro Val Leu Thr Pro Lys Asp Glu Gly Lys
259      85      90      95
260 Asn Arg Leu Arg Met Ile Leu Val Ala Asp Arg Cys Gly Ile Thr Pro
261      100      105      110
262 Asp Ser Leu Thr Gly Met Arg Glu Ser Ile Val Gln Ala Val Ser Ala
263      115      120      125
264 Tyr Val Asp Ile Glu Thr Glu Glu Glu Ile Glu Val Asn Leu Ser Thr
265      130      135      140
266 Asp Pro Glu Leu Gly Thr Ile Tyr Ser Val Ala Val Pro Val Arg Arg
267 145      150      155      160
268 Val Lys Ser Arg Arg Ile Gly Gly Val Asp Thr Ser Glu Asp Gly Lys

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VERIFICATION SUMMARY

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DATE: 06/05/2002

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Input Set : A:\028750-219.ST25.txt

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L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date